



THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: Latos, George P., et al. Atty. Docket: 90555.000014
Serial No.: 10/759,476 Examiner: Ferguson, Marissa L.
Filed: January 16, 2004 Art Unit: 2854
Confirmation No. 7592
Title: SCREEN PRINTING AND LASER TREATING SYSTEM AND
METHOD

Appeal Brief Pursuant to 37 C.F.R. §41.37

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellant hereby appeals to the Board of Patent Appeals and
Interferences from the Examiner's Final Rejection of Claims 1-24, 31-34, 39
and 40, in the Final Office Action mailed August 29, 2005.

A timely Notice of Appeal was filed on September 26, 2005.

BRIEF ON APPEAL

(i) Real Party in Interest

Icon Textile Laser Systems, Inc. is the real party in interest and the sole owner of the application by reason of an assignment recorded June 28, 2004.

(ii) Related Appeals and Interferences

No appeals or interferences are known which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

(iii) Status of Claims

Claims 1-24, 31-34, 39 and 40 are pending in the application and each of these claims is subject to the present appeal. Claims 25 - 30 and 35 - 38 have been cancelled. Section viii provides a clean copy of the finally rejected claims on appeal; Claims 1-24, 31-34, 39 and 40.

(iv) Status of Amendments

No amendment has been filed subsequent to the final rejection of August 29, 2005.

(v) Summary of Claimed Subject Matter

The present invention is an apparatus that combines both printing, such as screen printing with laser treating (performed either before or after printing).

Independent Claim 1 recites an apparatus for treating a workpiece 8 by printing and laser treating comprising:

(a) a pallet 20 for supporting at least a portion of the workpiece 8 (paragraphs 0024, 0025 and 0028);

(b) a laser 100 selectively projecting a laser beam along a projection path to intersect the pallet (paragraphs 0036 and Figure 4); and

(c) a printing head 30 for printing the workpiece 8 disposed on the pallet 30, the pallet being movable relative to at least one of the laser and printing head (paragraphs 0028 and 0059).

Independent Claim 10 is directed to a screen printing and laser treating apparatus for printing and laser treating a workpiece 8 comprising:

(a) a pallet 20 for supporting at least a portion of the workpiece 8 (paragraphs 0024, 0025 and 0028);

(b) a screen 34 for passing ink to print on the workpiece 8, the pallet 20 being movable relative to the screen 34 between a screening position and a spaced position (paragraphs 0031 and 0032); and

(c) a laser 100 projecting a laser beam along a projection path to intersect the pallet 20 (Figure 4 and ¶ 0036).

Independent Claim 20 recites a method of marking a workpiece comprising:

(a) registering the workpiece 8 relative to a pallet 20 (paragraphs 0029 and 0039);

(b) treating the workpiece 8 with a laser 100 (paragraphs 043, 0048 and 0065);

(c) marking the workpiece 8 with ink (paragraphs 0034, 0035, 0036, 0054, 0064); and

(d) removing the laser treated and inked marked workpiece 8 from the pallet 20 (paragraphs 0028).

Independent Claim 39 is directed to an apparatus for treating a workpiece 8 by printing and laser treatment comprising:

(a) a pallet 20 for supporting at least a portion of a workpiece 8 (paragraphs 0024, 0025 and 0028);

(b) a print head 30 passing a colorant (paragraphs 0027, 0031, 0034) the pallet 30 being movable relative to the print head between a printing position and a spaced position (paragraphs 0028, 0032, 0060);

(c) a laser 100 projecting a laser beam along a projection path P (Figure 4 and paragraph 0036) to intersect the pallet 20, the laser beam selected to effect one or more of a pretreatment of the workpiece to condition the workpiece for the reception of the colorant and a post treatment of the colorant on the workpiece (paragraphs 0055, 0056, 0058).

Independent Claim 40 recites a method of marking a workpiece 8 comprising:

(a) registering a workpiece 8 to a pallet 20 (paragraphs 0029 and 0039);

(b) treating the workpiece 8 with a laser 100 (paragraphs 043, 0048 and 0065);

(c) marking the workpiece 8 with ink (paragraphs 0034, 0035, 0036, 0054, 0064); and

(d) removing the laser treated and ink marked workpiece from the pallet wherein treating of the workpiece with the laser 100 comprises one or more of a pretreating of the workpiece to precondition the workpiece for marking with ink and post treating of the marking ink on the workpiece (paragraphs 0055, 0056, 0058).

(vi) Grounds of Rejection to be Reviewed on Appeal

1. Whether Claims 1–6, 8, 10–12, 17–24, 31, 32, 39 and 40 are properly rejected under 35 USC §103(a) as being unpatentable over Tkacz et al. (US 5,845,569) in view of Bowker et al. (US 6,559,410).

2. Whether Claims 7, 9, 13–16, 33 and 34 are properly rejected under 35 USC §103(a) as being unpatentable over Tkacz et al. in view of Bowker et al. and further in view of Costin (US 5,990,444).

(vii) Argument

Claims 1–6 and 8

Claims 1–6 and 8 recite in part, “a laser selectively projecting a laser beam along a projection path to intersect the pallet; and (c) a printing head for printing the workpiece disposed on the pallet, the pallet being moveable relative to at least one of the laser and the printing head.”

Tkacz is relied upon to disclose the claimed elements for printing work pieces disposed on pallets that move relative to a printing head. The Examiner acknowledges that Tkacz does not explicitly disclose a controller and a fixed laser selectively projecting a laser beam along a projection path to intersect the pallets, the pallets being movable relative to the laser. Bowker is then cited as showing a fixed laser and a controller that etches patterns and designs in jeans as the jeans rotate on the carousel. [Paper 20050825, page 2]

The Examiner thus asserts it would have been obvious “to modify the invention as taught by Tkacz et al. to include the laser as taught by Bowker et al., since Bowker et al. teaches that it is advantageous to provide uniform laser treatment in a multiplicity of area include front and rear sides of a garment.” [Paper 20050825, page 3]

The proposed combination fails for a number of reasons:

1. The proposed combination picks and chooses from the references.

2. The proposed combination is contrary to the express operation of both the references. That is, Tkacz covers the garment with a screen, a mask and ink, while Bowker removes material from the garment.

3. There is no motivation for the combination.

4. The proposed motivation does not support the claimed subject matter.

The genius of invention is often a combination of known elements which in hindsight seems preordained. To prevent hindsight invalidation of patent claims, the law requires some "teaching, suggestion or reason" to combine cited references. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1383(Fed. Cir. 1997). When the art in question is relatively simple, as is the case here, the opportunity to judge by hindsight is particularly tempting. Consequently, the tests of whether to combine references need to be applied rigorously. *See In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617(Fed. Cir. 1999), *limited on other grounds by In re Gartside*, 203 F.3d 1305, 53 USPQ2d 1769 (2000) (guarding against falling victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher). *McGinley v. Franklin Sports Inc.*, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001)

1. Impermissible picking and choosing from the references

The examiner has relied only upon selected portions of the references, rather than the teaching as a whole.

Tkacz is used to apply ink to a workpiece.

The present invention relates generally to printing machines and, more particularly, to turret or carousel style screen printing machines having multiple arm assemblies tiered above one another for permitting more arms to be available for the printing process.

5

10 (Col. 1)

Bowker is directed to the removal of material by laser etching.

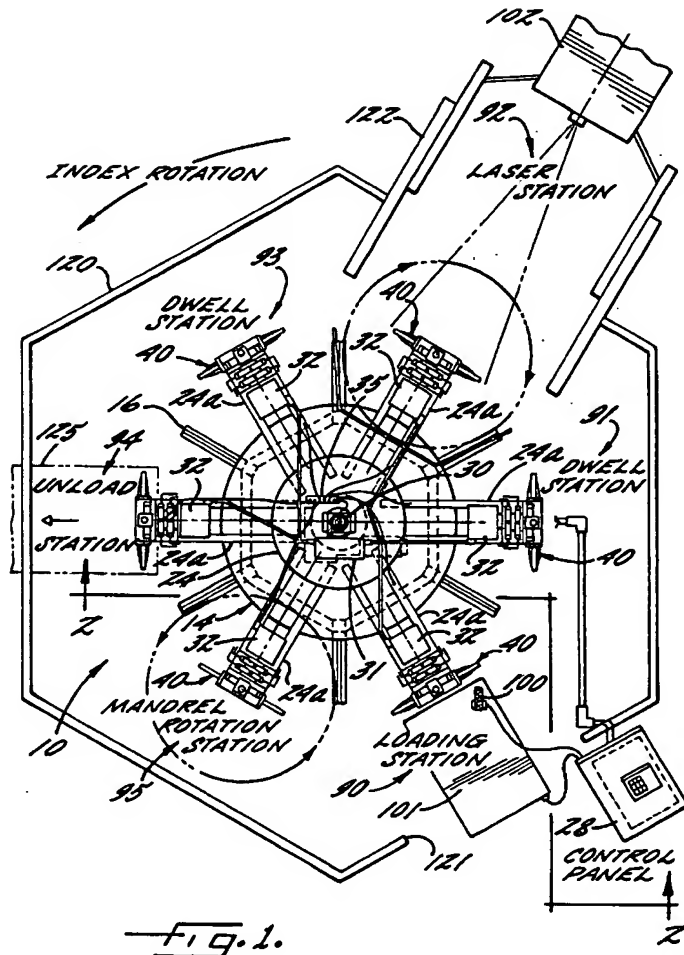
Another object is to provide an apparatus and method as characterized above which presents denim pants to a laser station in taut predetermined relation to the laser device for repeatable accurate laser etching. ⁵⁰ (Col. 1)

The two references are mutually exclusive. Tkacz pertains to screen printing garments where there is physical contact made between the screen (ink) and the garment, while Bowker relates to laser etching garments where there is no contact with the garment (only the laser intersects the garment).

Tkacz operates by contacting a screen with the workpiece, and then urging the ink through the screen onto the garment. Bowker requires an unobstructed line of sight from the laser to the garment.

In the Tkacz screen printing process, the screen overlies the garment, wherein a mask blocks certain areas of the screen. The ink is then disposed on the screen and passes over the mask and through open portions of the screen. Thus, there is always at least one layer overlying the garment, and can be as many as three layers (the screen, the mask and the ink).

In contrast, as seen in Figure 1 of Bowker, the laser has a direct, unobstructed line to the surface of the garment.



No basis has been provided or explanation given for accommodating these incompatible processes.

As stated by the Supreme Court, "that in addressing the question of obviousness a judge must not pick and choose isolated elements from the prior art and combine them so as to yield the invention in question if such a combination would not have been obvious at the time of the invention."

Dennison Manufacturing Company v. Panduit Corp., 229 USPQ 478, 479 (US 1986). The Court of Appeals for the Federal Circuit, stated "One cannot use

hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *In re Fine*, 5 USPQ2d 1596, 1600 (Fed. Cir.1988).

2. The proposed combination is contrary to the express operation of both references

The application of the teachings of Bowker are contrary to the operation of the Tkacz.

Tkacz is directed to the application of ink to the garment. In fact, Tkacz suggests up to 8 different colors or layers to be applied to the garment.

Indicia can be one or more colors. Typically, a screen printing machine has at least one station for each color²⁰ employed. For example, a design incorporating two colors will have at least two printing stations, one for each color. A design employing eight colors will have at least eight stations. Each station generally includes a printing head, which supports a single screen, the ink to be used at that²⁵ particular station and a mechanism for applying the ink to the textile. Each color is carried by a single screen. The (Col. 1)

In contrast, Bowker is directed to the removal of material from the garment. Specifically, Bowker employs the laser to etch material from the garment. As stated by the examiner:

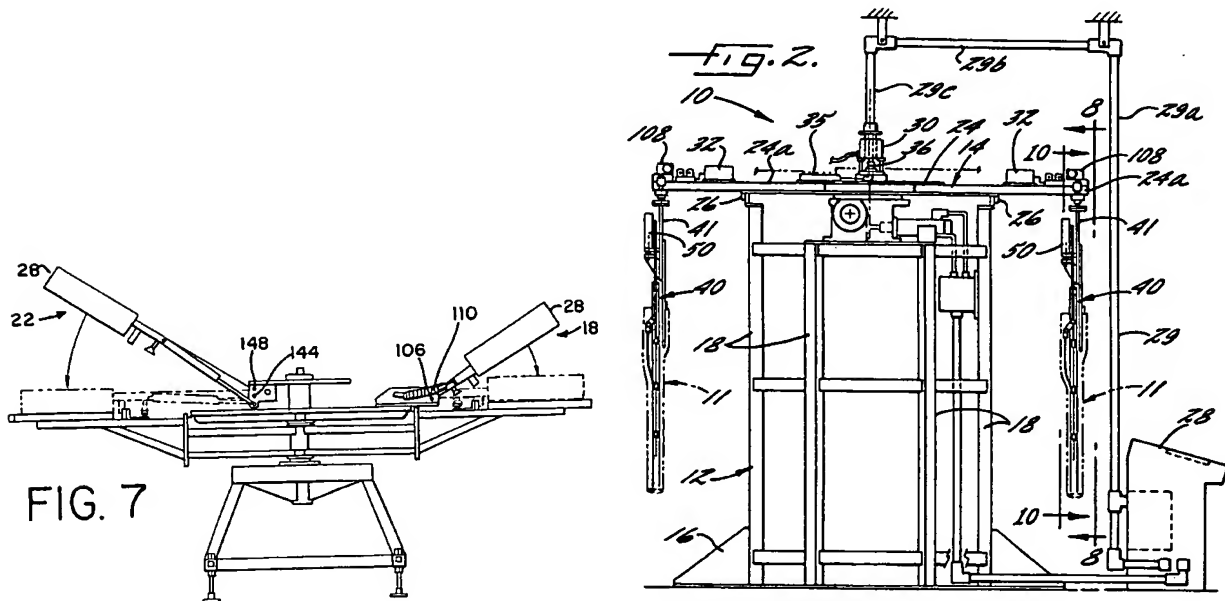
In carrying out still a further feature of the invention, following laser etching of the front side of a pair of pants supported by a mandrel 40 at the laser station 92, the⁶⁰ mandrel 40 can be automatically rotated to present the rear side of the pants in predetermined relation to the laser device 102 for etching wear patterns 105 on the rear side of the pants, such as depicted in FIG. 3B, in an accurate and⁶⁵ repeatable manner. In the illustrated embodiment, each (Col. 8)

In accordance with the disclosure of Bowker, the “etching” of wear patterns in the pants implies a removal of material. The removed material can be the fabric itself or the dye of the pants.

We have noted elsewhere, as a “useful general rule,” that references that teach away cannot serve to create a prima facie case of obviousness. *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1131, 1132 (Fed. Cir. 1994). If references taken in combination would produce a “seemingly inoperative device,” we have held that such references teach away from the combination and thus cannot serve as predicates for a prima facie case of obviousness. *In re Spinnoble*, 405 F.2d 578, 587, 160 USPQ 237, 244(CCPA 1969) (references teach away from combination if combination produces seemingly inoperative device); *see also In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127(Fed. Cir. 1984) (inoperable modification teaches away). *McGinley v. Franklin Sports Inc.*, 60 USPQ2d 1001, 1010 (Fed. Cir. 2001)

The removal of material via Bowker would obviate the added layers of Tkacz. That is, why not modify Tkacz to apply material in only the desired areas, rather than have to add a laser system? Thus, the references are not combinable. The only basis for combining the references is the present application, and such basis is not sustainable under 35 USC §103.

Further, Tkacz is a horizontal process and Bowker is a vertical process. Applicant respectfully submits ink management in Tkacz requires the horizontal treatment, while Bowker is expressly constructed as a vertical suspended mandrel structure 40.



No accommodation of these incompatibilities has been provided. Applicant submits such incompatibility further suggests the assertion rejections cannot be sustained.

3. There is no motivation for the combination.

That Bowker teaches laser etching of the front and rear of a pair of pants, does not suggest combination with the screen printing of Tkacz.

The primary reference Tkacz is directed to increasing the number of stations without necessarily increasing the required floor space or system diameter. [Col. 2, lines 17–20] Bowker is directed to an apparatus and method

for producing blue jean pants with a worn appearance using laser technology.

[Col. 1, lines 8–11]

A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. *See Dembiczak*, 175 F.3d at 999, 50 USPQ2d at 1617. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher." *Id.* (quoting *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983)). *In re Kotzab*, 55 USPQ2d 1313, 1316 (Fed. Cir 2000).

Most if not all inventions arise from a combination of old elements. *See In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. *See id.* However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *See id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. *See In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). *In re Kotzab*, 55 USPQ2d 1313, 1316 (Fed. Cir 2000).

The asserted motivation to modify the screen printing of Tkacz with the laser etching of Bowker is that Bowker "teaches it is advantageous to provide a uniform laser treatment in a multiplicity of areas including the front and rear sides of a garment" [Paper 20050825, page 3] just does not suggest the recited apparatus having "a laser selectively projecting a laser beam along a projection path to intersect the pallet; and (c) a printing head for printing the workpiece

disposed on the pallet, the pallet being moveable relative to at least one of the laser and the printing head.”

Further, a rejection cannot be predicated on the mere identification in Evans of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir 2000).

No basis, other than the present disclosure, is provided for the relationship of screen printing and laser etching.

There is nothing in the references themselves that suggest the expedient of modifying one of the disclosures by adding the other to accommodate both the printing and the laser etching of a garment in a single operation. Accordingly, the combination proposed by the Examiner would appear to have its genesis in applicant’s disclosure and not in the references themselves.

4. The proposed motivation does not support the claimed subject matter.

Even taking the proposed motivation at face value, it is unclear in view of the cited references why it being “advantageous to provide a uniform laser treatment in a multiplicity of area including the front and rear sides of a garment” [Paper 20050825, page 3] would motivate one of ordinary skill in the art to employ a laser with a printing head movable relative to one of the print head and the laser.

That is, what is the connection of laser etching and a turret or carrousel style screen printing machine? Alternatively, Tkacz would be modified to selectively locate the ink, thereby obviating the need for an expensive laser

system. The asserted combination is based upon the present disclosure, which is an improper basis for a rejection under 35 USC §103.

Applicant respectfully submits it is equally advantageous for garments to be kept clean and batch washing is more economical than hand washing. However, applicant submits this does not motivate one of skill in the art to place a laser or a printing head in a washing machine.

The proposed combination of references selectively picks and chooses from the references; is contrary to the express operation of both the references; has no motivation from the references themselves and does not support the claimed subject matter. Therefore, Claims 1–6 and 8 which recite in part, “a laser selectively projecting a laser beam along a projection path to intersect the pallet; and (c) a printing head for printing the workpiece disposed on the pallet, the pallet being moveable relative to at least one of the laser and the printing head” are in condition for allowance and reversal of the outstanding rejection is requested.

Claims 10–12 and 17–19

Claims 10–12 and 17–19 recite in part, “a screen for passing ink to print on the workpiece, the pallet being moveable relative to the screen between a screening position and a spaced position; and (c) a laser projecting a laser beam along a projection path to intersect the pallet.”

Tkacz is relied upon to disclose “a pallet (14, 16 and 26) for supporting at least a portion of a work piece and a screen (22) for passing ink on the work piece (Column 6, lines 37 -- 30 [sic 40]), the pallet being movable relative to

the screen movable [sic] between a screen position and a space position (Figures 6 and 7). However, he does not explicitly disclose a laser projecting a beam along a projection path to intersect a pallet in a laser beam intersecting the pallet in a spaced position. Bowker et al. teaches an apparatus using a fixed laser (92, 102 and Figure 1) projecting a beam (Figure 1) intersecting a loading station (40 [functions as a pallet]) that etches patterns and designs in jeans as the jeans rotate on a carousel (Abstract)." [Paper 20050825, page 3]

The Examiner asserts it would have been obvious to modifying Tkacz "to include a laser has taught by Bowker et al., since Bowker et al. teaches that it is advantageous to provide a uniform laser treatment in a multiplicity of areas including front and rear sides of a garment." [Paper 20050825, page 3 – 4]

However, Claims 10–12 and 17–19 recite in part, "a screen for passing ink to print on the workpiece, the pallet being moveable relative to the screen between a screening position and a spaced position; and (c) a laser projecting a laser beam along a projection path to intersect the pallet."

Applicant respectfully reasserts the deficiencies of the proposed combination and motivation as set forth in the analysis of Claims 1–6 and 8.

Further, as set forth in Claims 10–12 and 17–19, "a screen for passing ink to print on the workpiece" is recited in conjunction with the laser. To dispose a screen on the garment for following the primary reference Tkacz would preclude application of the secondary reference Bowker. That is, the laser of Bowker would be reflected, absorbed by or destroy the intervening screen of Tkacz. Such result cannot sustain a rejection under 35 USC §103.

Claims 20-24

Independent Claim 20 and dependent Claims 21-24 recite a method including in part, (a) registering the workpiece relative to a pallet; (b) treating the workpiece with a laser; (c) marking the workpiece with ink; and (d) removing the laser treated and ink marked workpiece from the pallet."

The motivation for the combination of Tkacz and Bowker is again it would have been obvious "to modify the invention as taught by Tkacz et al. to include the laser as taught by Bowker et al., since Bowker et al. teaches that it is advantageous to provide uniform laser treatment in a multiplicity of area include front and rear sides of a garment." [Paper 20050825, page 3]

Tkacz requires the pallet 26 be a flat planar object to allow the screen printing. However, Bowker employs an air driven mandrels having an articulated linkage suspended from an overhead support plate.

at other work or processing stations. To this end, the illustrated turntable 24 includes a plurality of identical 50 mandrels 40 supported in depending fashion at equal circumferentially spaced locations about the turntable. Each mandrel 40 comprises articulated linkage suspended from an overhead support plate 41 and designed for articulated movement between a contracted position which enables 55 positioning of a pair of pants onto the mandrel and an expanded position which tautly supports front and back sides of the pants in predetermined relation to the turntable while accommodating different sizes and styles of pant. (Col. 3)

No basis or explanation has been provided for the incompatibility of the required flat surface for screen printing and the articulated linkage which could not support screen printing. The recited step of "removing the laser treated

and ink marked workpiece from the pallet” is not possible from the asserted combination.

Further, the recited step of “removing the laser treated and ink marked workpiece from the pallet” is contrary to the adding of material by Tkacz and etching of Bowker. Again, Tkacz would be modified to locate ink in the desired locations to avoid having to use a laser to remove material. As the asserted rejection is contrary to the cited references, the rejection cannot be sustained.

Therefore, this rejection cannot be sustained.

Claims 31 and 32

Independent Claim 31 and dependent 32 recite in part, “a plurality of pallets moveable relative to the print heads, each pallet moveable between a printing position and a non-printing position; and (c) a laser projecting a laser beam along a projection path to intersect the pallet, upon the pallet being in the non-printing position.”

Independent Claim 31 is rejected on the basis that it would have been obvious “to modify the invention as taught by Tkacz et al. to include the laser as taught by Bowker et al., since Bowker et al. teaches that it is advantageous to provide uniform laser treatment in a multiplicity of area include front and rear sides of a garment.” [Paper 20050825, page 3]

The examiner has not provided any basis for the movement of the pallets to a non-printing position and the intersection of the laser beam. The Bowker laser travels horizontally unobstructed to intersect the garment, while Tkacz

employs a horizontal pallet with a screen the move from an adjacent position to a spaced by substantially vertically overlying position.

Applicant also reasserts the distinctions set forth under the analysis of Claims 1–6 and 8.

Therefore, this rejection of Claims 31 and 32 cannot be sustained.

Claim 39

Independent Claim 39 recites an apparatus having in part, “the laser beam selected to effect one or more of a pretreatment of the workpiece to condition the workpiece for reception of the colorant and a post treatment of the colorant on the workpiece.”

However, Claim 39 is rejected as it would have been obvious “to modify the invention as taught by Tkacz et al. to include the laser as taught by Bowker et al., since Bowker et al. teaches that it is advantageous to provide uniform laser treatment in a multiplicity of area include front and rear sides of a garment.” [Paper 20050825, page 5]

The recited limitation has been recognized as not explicitly disclosed in Tkacz. [Paper 20050825, page 4] However, the basis for the missing limitation is again that Bowker “provide uniform laser treatment in a multiplicity of area include front and rear sides of a garment.” [Paper 20050825, page 5] Applicant is unable to identify any relation between laser etching the front and rear sides of jeans and “the laser beam selected to effect one or more of a pretreatment of the workpiece to condition the workpiece for reception of the colorant and a post treatment of the colorant on the workpiece.” This deficiency is sufficient

to require reversal of the asserted rejection. Applicant also reasserts the distinctions set forth in the analysis of Claims 1–6 and 8.

Claim 40

Independent Claim 40 recites a method including in part, “wherein treating the workpiece with the laser comprises one or more of a pretreating of the workpiece to precondition the workpiece for marking with ink and a post treating of the marking ink on the workpiece.”

There is no basis in the cited references for “removing the laser treated and ink marked workpiece from the pallet.” The references individually teaching the added of ink and the etching by laser do not suggest a garment having both treatments. No motivation from the references has been provided for employing a procedure that is opposite to that disclosed in the primary reference.

Claim 40 further recites in part, “pretreating of the workpiece to precondition the workpiece for marking with ink and a post treating of the marking ink on the workpiece.”

The basis for the missing limitation is again that Bowker “provide uniform laser treatment in a multiplicity of area include front and rear sides of a garment.” [Paper 20050825, page 5] Applicant is unable to identify any relation between laser etching the front and rear sides of jeans and “pretreating of the workpiece to precondition the workpiece for marking with ink and a post treating of the marking ink on the workpiece.” This deficiency is sufficient to

require reversal of the asserted rejection. Applicant also reasserts the distinctions set forth in the analysis of Claims 1–6 and 8.

Claims 7, 9, 13–16, 33 and 34

Claims 7 and 9

Claims 7 and 9 stand rejected under 35 USC §103 as being unpatentable over Tkacz et al. in view of Bowker et al. and further in view of Costin (US 5,990,444). [Paper 20050825, page 5–6]

The rejection is based upon the assertion that “it would have been obvious ... to further modify the invention as taught by Tkacz et al. to include a galvanometer scanner, a focusing optic and beam expander as taught by Costin, since Costin teaches that is desirable to incorporate the scanner, optics and expander in order to provide a suitable method of using a laser in turn forming accurate and precise graphics on suitable materials.” [Paper 20050825, page 5–6]

Claims 7 and 9 depend from Claim 1 and include all the limitations thereof. Costin does not cure the deficiencies of the primary and secondary references. While Costin discloses a laser method for scribing graphics on material, wherein an Energy Density Per Unit Time (EDPUT) is determined for a given material – this does not provide motivation for combination with a printing head in cooperation with a pallet and a laser. That a tertiary reference may disclose limitations of a dependent claim cannot sustain a rejection of independent claim, and hence dependent claim.

The MPEP at section 2143.01 cites *In re Rouffet*, 47 USPQ1350 as holding that even though the proposed combination teaches every element of the claimed invention, without a motivation to combine, the rejection is improper. As set forth above the asserted motivation is deficient in form and substance.

Claims 13 and 16

Claims 13 and 16 stand rejected under 35 USC §103 as being unpatentable over Tkacz et al. in view of Bowker et al. and further in view of Costin (US 5,990,444). [Paper 20050825, page 5–6]

The rejection is based upon the assertion that “it would have been obvious ... to further modify the invention as taught by Tkacz et al. to include a galvanometer scanner, a focusing optic and beam expander as taught by Costin, since Costin teaches that is desirable to incorporate the scanner, optics and expander in order to provide a suitable method of using a laser in turn forming accurate and precise graphics on suitable materials.” [Paper 20050825, page 5–6]

Claims 13 and 16 depend from Claim 10 and include all the limitations thereof. Costin does not cure the deficiencies of the primary and secondary references. While Costin discloses a laser method for scribing graphics on material, wherein an Energy Density Per Unit Time (EDPUT) is determined for a given material – this does not provide motivation for combination with a printing head in cooperation with a pallet and a laser. That a tertiary reference may disclose limitations of a dependent claim cannot sustain a rejection of independent claim, and hence dependent claim. The MPEP at section 2143.01

cites *In re Rouffet*, 47 USPQ1350 as holding that even though the proposed combination teaches every element of the claimed invention, without a motivation to combine, the rejection is improper. As set forth above the asserted motivation is deficient in form and substance.

Claim 14

Claim 14 stands rejected under 35 USC §103 as being unpatentable over Tkacz et al. in view of Bowker et al. and further in view of Costin (US 5,990,444). [Paper 20050825, page 5–6]

The rejection is based upon the assertion that “it would have been obvious ... to further modify the invention as taught by Tkacz et al. to include a galvanometer scanner, a focusing optic and beam expander as taught by Costin, since Costin teaches that is desirable to incorporate the scanner, optics and expander in order to provide a suitable method of using a laser in turn forming accurate and precise graphics on suitable materials.” [Paper 20050825, page 5–6]

Claim 14 depends from Claim 10 and includes all the limitations thereof. Costin does not cure the deficiencies of the primary and secondary references. Claim 14 further recites in part “a beam expander in the projection path.” The examiner asserts Costin discloses “a device that expands beams (13, 17, 19).” [Paper 20050825, page 5]

In Costin, element 13 is an x-axis mirror, element 17 is a y-axis mirror and element 19 is a focusing lens. [Col. 5, lines 41–64]

The laser 11 generates a laser beam 12 in the direction of
a computer numerically controlled mirror system. The mir- 40
ror system includes an x-axis mirror 13. The x-axis mirror 13
is mounted on an x-axis galvanometer 14. The x-axis
galvanometer 14 is adapted to rotate to cause rotation of the
x-axis mirror 13. Rotation of the x-axis mirror 13 causes 45
movement of the laser beam 12 along the x-axis. A numeri-
cal control computer 15 controls the output of a power
source 16 to control rotation of the x-axis galvanometer. The
laser beam 12 is deflected by the x-axis mirror 13 and
directed toward a y-axis mirror 17. The y-axis mirror 17 is 50
mounted on an y-axis galvanometer 18. The y-axis galva-
nometer 18 is adapted to rotate to cause rotation of the y-axis
mirror 17. Rotation of the y-axis mirror 17 causes movement
of the laser beam 12 along the y-axis. The numerical control
computer 15 controls the output of the power source 16 to 55
control rotation of the y-axis galvanometer 18.

The laser beam 12 is deflected by the y-axis mirror 17 and
directed through a focusing lens 19. The lens 19 is adapted
to focus the laser beam 12. Preferably, the lens 19 is a 60
multi-element flat-field focusing lens assembly, which opti-
cally maintains the focused spot on a flat plane as the laser
beam moves across the material to scribe a graphic. The lens
19, mirrors 13, 17 and galvanometers 14, 18 can be housed
in a galvanometer block (not shown).

(Col. 5)

This does not disclose a beam expander. Neither Tkacz nor Bowker has been cited to disclose a beam expander. Therefore, this limitation is absent from the cited references. No motivation has been provided for the existence of the recited beam expander. Therefore, this rejection cannot be sustained.

Claim 15

Claim 15 stands rejected under 35 USC §103 as being unpatentable over Tkacz et al. in view of Bowker et al. and further in view of Costin (US 5,990,444). [Paper 20050825, page 5–6]

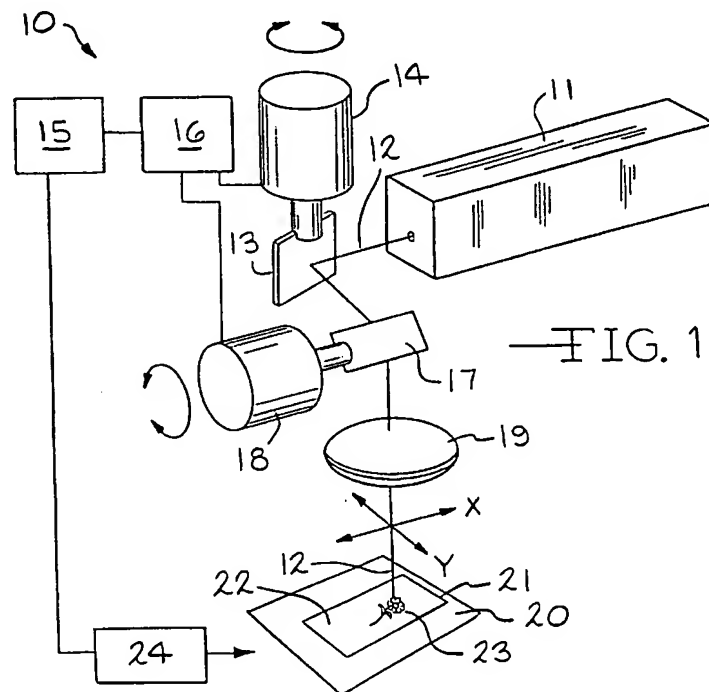
The rejection is based upon the assertion that “it would have been obvious ... to further modify the invention as taught by Tkacz et al. to include a galvanometer scanner, a focusing optic and beam expander as taught by

Costin, since Costin teaches that is desirable to incorporate the scanner, optics and expander in order to provide a suitable method of using a laser in turn forming accurate and precise graphics on suitable materials.” [Paper 20050825, page 5-6]

Claim 15 depends from Claim 10 and include all the limitations thereof. Claim 15 further recites in part “a polygon scanner.” The examiner asserts Costin discloses “a polygon scanner (Figure 1)” [Paper 20050825, page 5]

The term “polygon” does not even appear in Costin.

Figure 1 of Costin does not disclose a polygon scanner. Figure 1 merely discloses a laser 11 in a rectangular box.



Therefore, a polygon scanner is absent from the asserted references. The absence of this limitation and the lack of motivation provided for a polygon laser requires reversal of this rejection.

Claim 33

Claim 33 stands rejected under 35 USC §103 as being unpatentable over Tkacz, et al. in view of Bowker, et al. and further in view of Costin (US 5,990,444). [Paper 20050825, page 5–6]

The rejection is based upon the assertion that “it would have been obvious ... to further modify the invention as taught by Tkacz et al. to include a galvanometer scanner, a focusing optic and beam expander as taught by Costin, since Costin teaches that is desirable to incorporate the scanner, optics and expander in order to provide a suitable method of using a laser in turn forming accurate and precise graphics on suitable materials.” [Paper 20050825, page 5–6]

Claim 33 depends from Claim 31 and thus includes all the limitations thereof. Costin does not cure the deficiencies of the primary and secondary references. While Costin discloses a laser method for scribing graphics on material, wherein an Energy Density Per Unit Time (EDPUT) is determined for a given material – this does not provide motivation for combination with a printing head in cooperation with a pallet and a laser. That a tertiary reference may disclose limitations of a dependent claim cannot sustain a rejection of independent claim, and hence dependent claim. The MPEP at section 2143.01 cites *In re Rouffet*, 47 USPQ1350 as holding that even though the proposed combination teaches every element of the claimed invention, without a motivation to combine, the rejection is improper. As set forth above the asserted motivation is deficient in form and substance.

Claim 34

Claim 34 stands rejected under 35 USC §103 as being unpatentable over Tkacz, et al. in view of Bowker, et al. and further in view of Costin (US 5,990, 444). [Paper 20050825, page 5–6]

The rejection is based upon the assertion that “it would have been obvious ... to further modify the invention as taught by Tkacz et al. to include a galvanometer scanner, a focusing optic and beam expander as taught by Costin, since Costin teaches that is desirable to incorporate the scanner, optics and expander in order to provide a suitable method of using a laser in turn forming accurate and precise graphics on suitable materials.” [Paper 20050825, page 5–6]

Claim 34 depends from Claim 31 and thus includes all the limitations thereof. Costin does not cure the deficiencies of the primary and secondary references. Claim 34 further recites in part, “the laser scanner is a polygon scanner.” Costin does include the term “polygon.” Figure 1 of Costin does not disclose or suggest a polygon laser. That the laser 11 of Costin is shown as a rectangular box does not disclose a polygon laser. Such “disclosure” is not enabling.

As none of the references disclose or suggest this limitation, the asserted rejection cannot be sustained.

In the “Response to Arguments” the examiner asserts the “motivation for the combination is simply to make the garment more appealing and aesthetically pleasing to the consumer eye.” However, this is not a motivation

for present combination and is not supported with sufficient particularity. That is, this “motivation” is a conclusory statement, rather than a suggestion to combine the particular disclosures.

Our case law makes clear that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight. [citations omitted] *Ecolochem v. Southern California Edison Co.* 56 USPQ2d 1065, 1073 (Fed. Cir. 2000).

The present claims provide a synergy by allowing the laser and printing operations to compliment one another. The only treating operation disclosed by Tkacz et al. is a screen printing operation and no other operation is suggested or contemplated. By the same token, Bowker et al., as referenced by the Examiner, simply teaches that it is advantageous to laser treat a garment. Nowhere does this reference suggest that the laser treatment be utilized in addition to any other treatment; laser etching is the only operation contemplated. Accordingly, it is not seen where there is any motivation in the references themselves for the suggestion of adding a laser treating operation to a printing operation as set out in applicant’s claims.

The MPEP at section 2143.01 cites *In re Rouffet*, 47 USPQ1350 as holding that even though the proposed combination teaches every element of the claimed invention, without a motivation to combine, the rejection is improper. As set forth above the asserted motivation is deficient in form and substance.

As the references do not suggest the apparatus or methods as claimed,
Applicant respectfully requests the Board reverse the outstanding rejections
under 35 USC §103.

Respectfully submitted,



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(viii) Claims Appendix

1. An apparatus for treating a workpiece by printing and laser treatment, the apparatus comprising:

- (a) a pallet for supporting at least a portion of the workpiece;
- (b) a laser selectively projecting a laser beam along a projection path to intersect the pallet; and
- (c) a printing head for printing the workpiece disposed on the pallet, the pallet being moveable relative to at least one of the laser and the printing head.

2. The apparatus of Claim 1, further comprising a controller connected to the laser.

3. The apparatus of Claim 1, wherein the printing head is moveable between a screening position and a retracted position.

4. The apparatus of Claim 1, wherein the pallet includes a registration of the workpiece relative to the pallet for both the laser and the printing head.

5. The apparatus of Claim 1, wherein the pallet is moveable.

6. The apparatus of Claim 1, wherein the laser is fixed.

7. The apparatus of Claim 1, wherein the laser is moveable.

8. The apparatus of Claim 1, wherein the printing head includes a screen for passing the ink.

9. The apparatus of Claim 1, wherein the laser includes a scanning laser.

10. A screen printing and laser treating apparatus for printing and laser treating a workpiece, the apparatus, comprising:

(a) a pallet for supporting at least a portion of the workpiece;

(b) a screen for passing ink to print on the workpiece, the pallet being moveable relative to the screen between a screening position and a spaced position; and

(c) a laser projecting a laser beam along a projection path to intersect the pallet.

11. The screen printing and laser treating apparatus of Claim 10, wherein the laser beam intersects the pallet in the spaced position.

12. The screen printing and laser treating apparatus of Claim 10, further comprising a plurality of screens.

13. The screen printing and laser treating apparatus of Claim 10, wherein the laser includes a focusing optic in the projection path for changing a focal point of the laser beam along the projection path.

14. The screen printing and laser treating apparatus of Claim 10, wherein the laser includes a beam expander in the projection path.

15. The screen printing and laser treating apparatus of Claim 10, wherein the laser includes a polygon scanner.

16. The screen printing and laser treating apparatus of Claim 10, wherein the laser includes a galvanometer laser scanner.

17. The screen printing and laser treating apparatus of Claim 10, wherein the laser is selected to cut the workpiece.

18. The screen printing and laser treating apparatus of Claim 10, wherein the pallets rotate about a central axis.

19. The screen printing and laser treating apparatus of Claim 10, further comprising a frame and a plurality of printing heads connected to the frame.

20. A method of marking a workpiece, the method comprising:

- (a) registering the workpiece relative to a pallet;
- (b) treating the workpiece with a laser;
- (c) marking the workpiece with ink; and
- (d) removing the laser treated and ink marked workpiece from the pallet.

21. The method of Claim 20, wherein treating the workpiece with a laser includes at least one of fading, photo-decomposing, cutting, ablating, perforating or marking.

22. The method of Claim 20, wherein marking the workpiece with ink includes passing the ink through a screen to mark the workpiece.

23. The method of Claim 20, further comprising moving the pallet relative to a laser marker.

24. The method of Claim 20, further comprising marking the workpiece with a plurality of inks.

25. (Cancelled).

26. (Cancelled).

27. (Cancelled).

28. (Cancelled).

29. (Cancelled).

30. (Cancelled).

31. An apparatus for marking a workpiece, comprising:

(a) a plurality of printing heads;

(b) a plurality of pallets moveable relative to the print heads, each pallet moveable between a printing position and a non-printing position; and

(c) a laser projecting a laser beam along a projection path to intersect the pallet, upon the pallet being in the non-printing position.

32. The apparatus of Claim 31, wherein each printing head includes a screen and a wiper for selectively urging ink through a screen.

33. The apparatus of Claim 31, wherein the laser scanner is a galvanometer laser scanner.

34. The apparatus of Claim 31, wherein the laser scanner is a polygon scanner.

35. (Cancelled).

36. (Cancelled).

37. (Cancelled).

38. (Cancelled).

39. An apparatus for treating a workpiece by printing and laser treatment, the apparatus comprising:

- (a) a pallet for supporting at least a portion of the workpiece;
- (b) a print head passing a colorant for printing on the workpiece, the pallet being moveable relative to the print head between a printing position and a spaced position; and
- (c) a laser projecting a laser beam along a projection path to intersect the pallet, the laser beam selected to effect one or more of a pretreatment of the workpiece to condition the workpiece for reception of the colorant and a post treatment of the colorant on the workpiece.

40. A method of marking a workpiece, the method comprising:

- (a) registering the workpiece relative to a pallet;
 - (b) treating the workpiece with a laser;
 - (c) marking the workpiece with ink; and
 - (d) removing the laser treated and ink marked workpiece from the pallet
- wherein treating the workpiece with the laser comprises one or more of a pretreating of the workpiece to precondition the workpiece for marking with ink and a post treating of the marking ink on the workpiece.

(ix) Evidence Appendix

None.

(x) Related Proceedings Appendix

None.